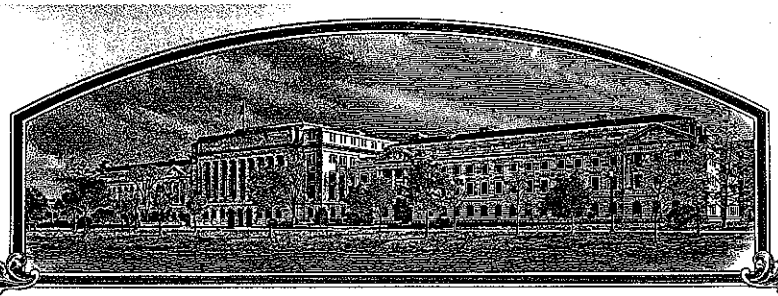

No. 200600274

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) MAY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE [illegible] GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET S[illegible]

WHEAT, COMMON

'TAM 112'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of February, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions* — Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Texas Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
TX98V9628

3. VARIETY NAME
TAM 112

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Office of the Director
2147 TAMU, College Station, TX 77843-2147

5. TELEPHONE *(include area code)*
979-845-4747

6. FAX *(include area code)*
979-458-4765

FOR OFFICIAL USE ONLY
PVPO NUMBER
200600274
FILING DATE
August 22, 2006

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Texas State Research Agency

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Janie Hurley, Licensing Mgr., Office of Tech. Commercialization
The Texas A&M University System, 3369 TAMU
College Station, TX 77843-3369

FEES RECEIVED
FILING AND EXAMINATION FEES: $ 4382.00 DATE 8-22-2006
CERTIFICATION FEE: $ 768.00 DATE 12-12-2006

11. TELEPHONE (Include area code)
979-847-8682

12. FAX (Include area code)
979-845-1402

13. E-MAIL
jhurley@tamu.edu

14. CROP KIND *(Common Name)*
wheat

16. FAMILY NAME *(Botanical)*
Poaceae

15. GENUS AND SPECIES NAME OF CROP
Triticum aestivum L.

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? *(OPTIONAL)*
☐ YES ☒ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)
- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of Variety
- d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☒ Exhibit F. Declaration Regarding Deposit
- g. ☒ Voucher Sample *(3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☒ Filing and Examination Fee ($4,382), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☒ YES *(If "yes", answer items 21 and 22 below)* ☐ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☒ YES ☐ NO
IF YES, WHICH CLASSES? ☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
3 FOUNDATION 5 REGISTERED 7 CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
NAME *(Please print or type)*		NAME *(Please print or type)*	
Mark A. Hussey			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Associate Director, TAES	8-10-2006		

(See reverse for instructions and information collection burden statement)

ST-470 (02-06) designed by the Plant Variety Protection Office using Word 2003.

200600274

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for $4,382 ($518 filing fee and $3,864 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice).* **NEW:** With the application for a seed reproduced variety **or by direct deposit soon after filing**, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to **reproduce** the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initiated and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of $768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: http://www.ams.usda.gov/science/pvpo/PVPindex.htm

SPECIFIC INSTRUCTIONS:
To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

August 31, 2005, Foundation seed of TAM 112 was transferred to Watley Seed Company for planting and production under a license agreement between Watley and TAES/A&M System.(U.S.)

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

2

Exhibit A 200600274

Origin and Breeding History – 'TAM 112' Wheat

'TAM 112' (experimental designation TX98V9628) is a hard red winter wheat (*Triticum aestivum* L.) experimental line developed by the Texas Agricultural Experiment Station (TAES). 'TAM 112' is an F_4 derived line from the cross U1254-7-9-2-1/TXGH10440. David Worrall, TAES Vernon, made the cross during the winter of 1991-92. U1254-7-9-2-1 is a USDA-ARS germplasm line from the Plant Science and Entomology Research unit, Manhattan, Kansas. It was developed from the cross TAM 200/TA2460. TA2460 is an *Aegilops tauschii* (one of the progenitor species of modern hexaploid wheat) line that was identified as having a unique gene for leaf rust resistance (this gene has since been designated *lr41*). TXGH10440 has the same pedigree as TAM 110 (TAM 105*4/Amigo*4//Largo). Like TAM 110, TXGH10440 carries *gb2* gene for greenbug resistance from the germplasm line Amigo and *gb3* from the synthetic hexaploid line named Largo. The F_3 and F_4 generations were grown as bulk populations on the TAES farm at Chillicothe in 1995 (year of harvest) and 1996, respectively. Random heads were harvested from the F_4 population and were planted as head-rows at Chillicothe in the fall of 1996. The line that became TX98V9628 ('TAM 112') was visually selected for its agronomic characteristics and was grown as a single plot in 1998 and in replicated trials thereafter. The selection criteria were forage potential and grain yield. It was tested in Texas Elite trials (NTE, WTE, TXE) in 2002 and 2003, Southern Regional Performance Nursery (SRPN) in 2002 and 2003, and the Texas Uniform Variety Trial (UVT) in 2004. A head-row purification was conducted in 2003. One hundred-fifty rows were visually evaluated for uniformity and 135 were harvested individually. After harvest, 10 seed each from these 135 lines were evaluated for resistance to biotype E greenbug. Based on purity for resistance, the seed from 133 of these lines were bulked. Three acres of the purified TX98V9628 was planted by Texas Foundation Seed Service of TAES in the fall of 2003 to produce Breeders seed.

TAM 112 has been observed for 6 generations during testing and seed increase, and is stable and uniform. A tall variant (10 cm taller) was identified in the breeders seed of TAM 112 at a frequency of approximately 0.01%, but was identical to the variety in all other characteristics. Up to 0.05% variant plants may be encountered in subsequent generations. This variant is commercially acceptable and predictable.

3

Exhibit B 200600274

Statement of Distinctness – 'TAM 112' Wheat

'TAM 112' (TX98V9628) is awned, red-glumed, and has good potential for both forage and grain production in the southern Great Plains. It is medium height, medium-early maturing, and has winter hardiness similar to most commonly grown hard winter wheat cultivars. It is particularly suited for dryland production systems in the High Plains of Texas and similar areas in adjacent states. It is suitable for both dual purpose (grazing plus grain) and grain only systems.

TAM 112 is most similar to TAM 110. Specifically, TAM 112 and TAM 110 are similar in area of adaptation, drought tolerance, and disease and insect resistance; however, TAM 112 differs from TAM 110 in the following physical characteristics: TAM 112 has purple anthers where TAM 110 has yellow anthers; and coleoptile anthocyanin is present in TAM 112, but is absent in TAM 110. These differences are recorded in the objective descriptions for each variety.

4

Exhibit C

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY

Wheat (*Triticum* spp.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
		TX98V9628

ADDRESS *(Street and No. or RD No., City, State, Zip Code and Country)*

FOR OFFICIAL USE ONLY
PVPO NUMBER

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., 0 9 9 or 0 9)
when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data
should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors;
designate system used: _____. Please answer all questions for your variety; lack of response may delay progress of
your application.

200600274

1. KIND:

[1]

1 = Common
2 = Durum
3 = Club
4 = Other (Specify) _____

2. VERNALIZATION:

[2]

1 = Spring
2 = Winter
3 = Other (Specify) _____

3. COLEOPTILE ANTHOCYANIN:

[2]

1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

[2]

1 = Prostrate 2 = Semi-Erect 3 = Erect

5. PLANT COLOR: (boot stage)

[3]

1 = Yellow-Green
2 = Green
3 = Blue-Green

6. FLAG LEAF: (boot stage)

[1]

1 = Erect 2 = Recurved

[2]

1 = Not Twisted 2 = Twisted

[2]

1 = Wax Absent 2 = Wax Present (more on the back of the leaf)

7. EAR EMERGENCE:

[1][1][4] Number of Days (**Average**)

[0][5] Number of Days Earlier Than * Cutter

Same As * _____

[0][1] Number of Days Later Than * TAM 110

*Relative to a Commercial Variety Grown in the Same Trial

8. ANTHER COLOR:

[2]

1 = Yellow 2 = Purple

6

6

9. PLANT HEIGHT: (from soil to top of head, excluding awns)

[0][6][5] cm (**Average**)

[0][5] cm Taller Than TAM W-101 *

Same As TAM 110 and Jagger *

[0][2] cm Shorter Than Cutter *

10. STEM:

A. ANTHOCYANIN

[1] 1 = Absent 2 = Present

B. WAXY BLOOM

[1] 1 = Absent 2 = Present

C. HAIRINESS (last internode of rachis)

[1] 1 = Absent 2 = Present

D.INTERNODE

[1] 1 = Hollow 2 = Semi-Solid 3 = Solid

[4] Number of Nodes (**average**)

E. PEDUNCLE

[1] 1 = Erect 2 = Recurved 3 = Semi-Erect

[3][8] cm Length (**average**)

F. AURICLE

[1] Anthocyanin 1 = Absent 2 = Present

[1] Hair: 1 = Absent 2 = Present

11. HEAD: (at maturity)

A. DENSITY

[2] 1 = Lax
2 = Mid-dense (Laxidense)
3 = Dense

B. SHAPE

[1] 1 = Tapering
2 = Strap
3 = Clavate
4 = Other (Specify) _____

C. CURVATURE

[2] 1 = Erect
2 = Inclined
3 = Recurved

D. AWNEDNESS

[4] 1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned

12. GLUMES: (at maturity)

A. COLOR

[3] 1 = White
2 = Tan
3 = Other (Specify) _____red_____

E. BEAK WIDTH

[2] 1 = Narrow
2 = Medium
3 = Wide

B. SHOULDER

[5] 1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (Specify) _____

C. SHOULDER WIDTH

[2] 1 = Narrow
2 = Medium
3 = Wide

D. BEAK

[3] 1 = Obtuse
2 = Acute
3 = Acuminate

F. GLUME LENGTH

[2] 1 = Short (ca. 7mm)
2 = Medium (ca. 8mm)
3 = Long (ca. 9mm)

G. WIDTH

[2] 1 = Narrow (ca. 3mm)
2 = Medium (ca. 3.5mm)
3 = Long (ca. 4mm)

---

13. SEED:

A. SHAPE

[1] 1 = Ovate
2 = Oval
3 = Elliptical
4 = Other (Specify) _____

B. CHEEK

[1] 1 = Rounded
2 = Angular
3 = Other (Specify) _____

C. BRUSH

[1] 1 = Short
2 = Medium
3 = Long

[1] 1 = Not Collared
2 = Collared

D. CREASE

[1] 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[2] 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

E. COLOR

[3] 1 = White
2 = Amber
3 = Red

F. TEXTURE

[1] 1 = Hard
2 = Soft

G. PHENOL REACTION

[ ] 1 = Ivory 4 = Dark- Brown
2 = Fawn 5 = Black
3 = Light- Brown

H. SEED WEIGHT

[30] g/1000 Seed (**average**) (whole number only)

I. GERM SIZE

[2] 1 = Small
2 = Mid-Size
3 = Large

---

14. DISEASE: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

[2] Stem Rust (*Puccinia graminis* f. sp. *tritici*)

[1] Stripe Rust (*Puccinia striiformis*)

[0] Tan Spot (*Pyrenophora tritici-repentis*)

[1] Leaf Rust (*Puccinia recondita* f. sp. *tritici*)

[0] Loose Smut (*Ustilago tritici*)

[0] Flag Smut (*Urocystis agropyri*)

Exhibit C (Wheat)

0	Halo Spot (*Selenophoma donacis*)	0	Common Bunt (*Tilletia tritici* or T. *laevis*)
0	*Septoria nodorum* (Glume Blotch)	0	Dwarf Bunt (*Tilletia controversa*)
0	*Septoria avenae* (Speckled Leaf Disease)	0	Karnal Bunt (*Tilletia indica*)
0	*Septoria tritici* (Speckled Leaf Blotch)	2	Powdery Mildew (*Ersiphe graminis* f. sp. *tritici*)
0	Scab (*Fusarium* spp.)	0	"Snow Molds"
0	"Black Point" (Kernel Smudge)	0	Common Root Rot (*Fusarium, Cochliobolus* and *Bipolaris* spp.)
3	Barley Yellow Dwarf Virus (BYDV)	0	Rhizoctonia Root Rot (*Rhizoctonia solani*)
1	Soilborne Mosaic Virus (SBMV)	0	Black Chaff (*Xanthomonas campestris* pv. *translucens*)
0	Wheat Yellow (Spindle Streak) Mosaic Virus	0	Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)
3	Wheat Streak Mosaic Virus (WSMV)		Other (Specify) _____
	Other (Specify) _____		Other (Specify) _____
	Other (Specify) _____		Other (Specify) _____
	Other (Specify) _____		Other (Specify) _____

15. INSECT: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

0	Hessian Fly (*Mayetiola destructor*)	0	Other (Specify) - Wheat curl mite
0	Stem Sawfly (*Cephus* spp.)		Other (Specify) _____
0	Cereal Leaf Beetle (*Oulema melanopa*)		Other (Specify) _____
0	Russian Aphid (*Diuraphis noxia*)		Other (Specify) _____
2	Greenbug (*Schizaphis graminum*) –biotype E, I, & K		Other (Specify) _____
0	Aphids		Other (Specify) _____

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

Exhibit D

Additional Description – 'TAM 112' Wheat

TX98V9628 is adapted to the rain-fed production systems in the High Plains of Texas and similar areas in adjacent states. It has been extensively tested throughout the Great Plains. It is resistant to the three most prevalent greenbug biotypes (E, I, and K). Based on pedigree and reaction to greenbug, it has the genes *gb2* and *gb3*. Based on field observations, it is resistant to powdery mildew and susceptible to stripe rust. During selection and testing, it was resistant to the prevalent races of leaf rust, but is susceptible to a race that is increasing in prevalence in Texas. Test weight is medium-high and milling and baking characteristics are good. It does have the 1AL.1RS translocation where the short arm of chromosome 1 in rye has been substituted for the short arm of chromosome 1A in wheat.

TAM 112 is similar to TAM 110 in area of adaptation, drought tolerance, and disease and insect resistance; but averaged over 46 site-years in Texas, TX98V9628 yielded 5.9 bu/a more than TAM 110 (Table 1). Additional information and data is provided below in within the attached Tables.

Grain Yield

Performance data of TX98V9628 is presented for 103 different site-years:

	Locations
2002 North Texas Elite (NTE), Emphasis on Blacklands	9
2002 West Texas Elite (WTE), Emphasis on High and Rolling Plains	11
2002 Southern Regional Performance Nursery (SRPN), 10 states	26
2003 Texas Elite (TXE), statewide	10
2003 SRPN	31
2004 Uniform Variety Trial (UVT), statewide	16
Site-Years	103

Yield of TX98V9628 across the 46 site-years in Texas averaged 53 bu/a (Table 1). This was well above the check cultivars TAM 110 (47), Jagger (47) and Ogallala (49) and slightly less than 'Cutter' (54). TX98V9628 appears to have a wide area of adaptation. The SRPN represents 10 states throughout the Great Plains. TX98V9628 ranked 1st/46 across 26 locations in 2002 and 10th/46 across 31 locations in 2003 (Table 7).

10

Grain yield at individual locations in Texas is shown in Tables 13-16. TX98V9628 has performed well across all regions of Texas, but seems to be particularly well suited to dryland production on the High Plains and Rolling Plains. The 2002 and 2003 yield trials at Claude were grazed until late February and the 2003 trial at Chillicothe was clipped in mid February to simulate grazing. The grain yield for these three site-years indicates that TX98V9628 should perform well in a dual-purpose system. In 2004, TX98V9628 was tested against current popular varieties in the statewide variety trial. It ranked 3rd statewide, 1st in High Plains Dryland, 2nd in the Rolling Plains, 14th in High Plains Irrigated, and 13th in East/Central locations (Table 13).

Test Weight

Test weight from the 2002 to 2003 Texas trials is summarized in Table 2. Averaged across 27 site-years in Texas, TX98V9628 was 3.2 lb/bu greater than TAM 110, 2.2 lb/bu greater than Jagger, similar to Cutter, and 0.4 lb/bu less than TAM 400 and Ogallala. The test weight of TX98V9628 has been fairly stable across locations, consistently ranking among the top performers except at locations where leaf rust or stripe rust was severe. TX98V9628 is susceptible to some prevalent races of leaf rust and stripe rust. In the 2004 UVT, the test weight of TX98V9628 was equal to or better than all other varieties at the High Plains and Rolling Plains locations but was less than Ogallala and Cutter across the four East and Central locations (Table 13). Across 49 site-years in the SRPN, TX98V9628 was 2 lb/bu more than TAM 107 and not less than any of the checks (Table 8). Overall, it seems that TX98V9628 has a very good test weight except when foliar diseases to which it is susceptible are severe.

Forage Yield

Forage trials were conducted at Overton, Texas in 2003 and 2004 (Table 6). TX98V9628 yielded similarly to the forage wheat cultivar Lockett in both years. The fall and winter forage production (cuttings through February) was particularly good in both years, yielding in the top performing group for most cutting dates. This is a good characteristic for a dual purpose (grazing plus grain) wheat variety.

Agronomic data

In Texas, the heading date of TX98V9628 was 1 day later than TAM 110 and Jagger and 5 days earlier than Cutter (Table 3). Plant height was similar to TAM 110 and Jagger (Table 3). Data from the SRPN confirm that TX98V9628 is medium-early maturity and medium height (Table 8). Winter survival notes taken at locations in South Dakota, Iowa, and Nebraska, indicate that the winter hardiness of TX98V9628 is similar to or slightly less than TAM 107 (Table 8). This is adequate for the southern Great Plains. The straw strength of TX98V9628 has been less than TAM 107 and TAM 110 at high yielding environments (see lodging note in Table 8 and 13). This is a limitation for high input irrigated production. Data is limited, but TX98V9628 appears to be tolerant to low pH soils (Table 8).

Disease and Insect Resistance

Seedling inoculations indicate that TX98V9628 is resistant to the three most prevalent greenbug biotypes (E, I, and K; data not presented). Based on pedigree and reaction to greenbug, it has the genes *gb2* and *gb3* (the same combination of genes is in TAM 110). Natural infestations were severe enough for field ratings at Etter in 2002 (Table 3) and at Bushland dryland in 2004 (data not presented). At both locations, TX98V9628, TAM 110, and other lines/varieties thought to carry the gene *gb3* were rated as significantly less damaged.

TX98V9628 is thought to carry the leaf rust resistance gene *lr41*. During selection and preliminary yield trials it was resistant to prevalent races of leaf rust. But starting in 2003 and increasing in prevalence in 2004, leaf rust races virulent to *lr41* have become dominant in south, central, north central, and northeast Texas (ratings shown in Tables 3, 10, and 13). TX98V9628 is resistant to stem rust and is postulated to carry the gene *sr24* (Table 9). TX98V9628 is susceptible to stripe rust (Tables 3 and 10). It is highly resistant to powdery mildew (Table 11). TX98V9628 does have the 1AL.1RS translocation where the short arm of chromosome 1 in rye has been substituted for the short arm of chromosome 1A in wheat. This translocation has been associated with powdery mildew resistance, resistance to biotype C greenbug, and a moderate level of resistance to wheat streak mosaic virus. Data collected from the SRPN confirms the moderate resistance to wheat streak mosaic virus (Table 11). Based on SRPN data, TX98V9628 appears to be

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susceptible to wheat soilborne mosaic virus but might have some resistance to barley yellow dwarf virus (Table 11).

Quality

Protein content, kernel size, and kernel hardness are average for hard red winter wheat (Table 4). Averaged over 11 site-years, the protein content of TX98V9628 was 0.4% higher than TAM 110 and 0.8% lower than Jagger. The kernel weight was 0.7 mg more than TAM 110, 2.2 mg more than Jagger, and 2.5 mg less than TAM W-101. The average single kernel hardness (SKHT) value was 72, compared with 70 for TAM 110 and 72 for Jagger. This is acceptable for a hard wheat variety. TX98V9628 graded hard at all 4 locations evaluated in 2003. Mixograph and baking data from analyses performed by the USDA-ARS Hard Winter Wheat Quality Laboratory in Manhattan, Kansas are shown in Tables 5 and 12. TX98V9628 was acceptable for all characteristics measured. It was similar to TAM 110 and TAM 107 for all characteristics except mixograph time, mixograph tolerance, and baking mix-time. The dough mixing time measured by both the mixograph and baking tests were around 2 minutes longer than either TAM 110 (Table 5) or TAM 107 (Table 12). Dough mixing tolerance was better than either TAM 110 (Table 5) or TAM 107 (Table 12). The crumb grain, crumb color and loaf volume all indicated that TX98V9628 was among the best tested for bread-baking quality. Mixograms from three locations in Texas are shown in Figure 1. They graphically illustrate the long dough mix-time combined with good stability of TX98V9628. In summary, TX98V9628 seems to be a strong dough mixing wheat with an average protein content and good baking quality.

Summary

TX98V9628 has a good yield record across a wide range of environments. It is particularly suited for dryland production systems in the High Plains of Texas and similar areas in adjacent states. It should perform in dual purpose (grazing plus grain) systems as well as grain only systems. TAM 112 is similar to TAM 110 in maturity, area of adaptation, drought tolerance, and greenbug resistance. It is better than TAM 110 for grain yield, forage yield, test weight, and milling and baking quality. Like TAM 110, it does have the 1AL.1RS translocation where the short arm of chromosome 1 in rye has been substituted for the short arm of chromosome 1A in wheat.

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Table 1. Grain yield data from TAES trials conducted during 2002 to 2004

Name	Grain Yield									
	2004		2003		2002				Average	
	UVT	Rank/40	TXE	Rank/40	WTE	Rank/40	NTE	Rank/40		
	(bu a^{-1})									# Locations
TX98V9628	58.7	3	49.4	16	47.5	3	53.0	15	**52.9**	46
TAM W-101	47.8	24	42.0	38	37.3	36	39.9	40	**42.5**	46
TAM 110	54.4	15	42.7	36	42.2	19	44.6	38	**47.0**	46
Jagger	51.8	19	45.7	31	41.0	29	45.0	36	**46.5**	46
Cutter	56.2	11	56.4	1	43.2	12	58.5	3	**53.6**	46
Ogallala	52.4	18	48.6	22	43.6	8	50.7	21	**49.1**	46
TAM 111	58.4	6	51.1	10	42.8	15	-	-		
TAM 400	-	-	43.3	34	41.5	25	44.9	37		
# Locations	16		10		11		9		46	

UVT = Uniform Variety Trial, Statewide
TXE = Texas Elite, Statewide
WTE = West Texas Elite, Emphasis on High Plains and Rolling Plains
NTE = North Texas Elite, Emphasis on Blacklands
UA1 = Uniform Advance 1

Table 2. Test weight data from TAES trials conducted during 2002 to 2003

Name	Test weight											
	2003									2002		Average across years
	TXE									WTE	NTE	
	Bushland Irrigated	Chillicothe	Munday	McGregor	Brady	College station	Luling	Uvalde	Average			
	lb bu^{-1}											
TX98V9628	62.1	62.0	60.0	61.4	60.4	62.0	57.2	58.9	60.5	59.8	58.8	**59.7**
TAM W-101	61.6	61.6	59.2	61.1	57.1	61.0	56.2	53.7	58.9	58.5	57.4	**58.3**
TAM 110	60.4	61.0	57.7	58.7	57.5	57.4	52.5	57.1	57.8	56.7	55.1	**56.5**
TAM 400	62.6	62.5	60.9	63.1	60.7	63.3	57.4	58.5	61.1	60.5	58.7	**60.1**
Jagger	60.3	61.8	58.1	59.6	58.0	59.3	56.3	57.4	58.8	57.6	56.3	**57.5**
Cutter	61.8	62.3	60.0	61.2	59.4	62.9	59.6	55.8	60.4	59.3	59.1	**59.6**
Ogallala	62.2	62.4	60.8	61.4	58.8	62.6	58.0	55.2	60.2	60.3	60.0	**60.1**
TAM 111	62.2	61.4	58.5	60.1	58.6	60.4	56.0	51.8	58.6	59.1	-	-
# Locations									8	10	9	27

TXE = Texas Elite, Statewide
WTE = West Texas Elite, Emphasis on High Plains and Rolling Plains
NTE = North Texas Elite, Emphasis on Blacklands

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Table 3. Agronomic and disease data from TAES trials conducted during 2002 to 2003

Name	Heading				Height				Disease[2]			Greenbug
	2003	2002		Average	2003	2002		Average	2003			2002
	TXE	WTE	NTE		TXE	WTE	NTE		Leaf rust	Leaf rust	Stripe rust	Etter
	doy[1]				cm				Luling	Castroville	Castroville	(0-5, 5=Dead)
TX98V9628	124	118	107	**114**	72	56	66	**65**	60S	MR	S	0.67
TAM W-101	124	124	112	**119**	65	54	62	**60**	80S	MR	MR	5.00
TAM 110	123	116	106	**113**	71	58	63	**64**	80S	S	S	1.33
TAM 400	124	119	108	**115**	66	54	64	**61**	DEAD	MS	VS	4.33
Jagger	123	117	106	**113**	76	58	63	**66**	DEAD	S	MR	4.67
Cutter	125	126	110	**119**	74	59	68	**67**	20S	R	R	3.33
Ogallala	125	110	112	**114**	66	58	65	**62**	20MR	R	MR	3.67
TAM 111	124	121	-		74	59	-		60S	?	R	3.67
# Locations	2	3	4	9	2	2	1	5				
mean												3.33
cv (%)												16.20
l.s.d. (0.05)												0.95

[1] Days of the year from January 1
TXE = Texas Elite, Statewide
WTE = West Texas Elite, Emphasis on High Plains and Rolling Plains
NTE = North Texas Elite, Emphasis on Blacklands

[2] Rust sores: the numeric score indicates % of flag leaf area infected and the infection type is indicated by R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, t= trace, ?= not scored, Dead= no leaf area to score.

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Table 4. Protein and single kernal hardness data from TAES trials conducted during 2002 to 2003. TAMU Wheat Quality Laboratory.

Name	Quality							
	2-years Average				2003			
	Protein	SKHT Weight	SKHT Diameter	SKHT Index	Single Kernel Hardness Test (SKHT) Distribution			
	% dm	mg	mm		Bushland Irrigated	Chillicothe	Prosper	McGregor
TX98V9628	14.8	29.3	2.0	72	04--10--28--58--01	00--04--14--82--01	07--13--25--55--02	01--02--13--84--01
TAM W-101	15.2	31.8	2.1	61	06--24--37--33--02	04--10--20--66--01	04--12--25--59--01	02--16--22--60--01
TAM 110	14.4	28.6	1.9	70	08--21--25--46--02	01--03--12--84--01	05--13--29--53--01	00--03--07--90--01
TAM 400	15.2	27.4	2.0	74	02--09--21--68--01	01--01--08--90--01	05--12--17--66--01	01--03--06--90--01
Jagger	15.6	27.1	1.9	72	02--10--22--66--01	00--03--13--84--01	08--16--22--54--02	01--06--13--80--01
Cutter	15.2	30.1	2.0	71	03--10--25--62--01	00--03--13--84--01	03--10--25--62--01	01--01--07--91--01
Ogallala	15.6	25.2	1.9	66	05--12--24--59--01	05--13--24--58--01	12--13--26--49--03	06--14--18--62--02
TAM 111	14.5	28.2	1.9	61	05--19--31--45--01	07--21--30--42--02	19--23--27--31--03	09--20--28--43--02
# Locations	11	9	9	9				

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Table 5. Baking Data obtained from Hard Winter Wheat Quality Lab (HWWQL), Manhattan, KS for 2004 TXE/UVT entries with grain from 2003 Bushland Irrigated Trial Plots.

				SKHT				MIXOGRAPH							BAKING								
Test	Entry	Name	Test weight	weight	diameter	index	distribution	Wheat Ash	Wheat Protein	Flour Yield	Flour Ash	Flour Protein	Mixing time	Mixing tolerance	Flour absorption	mixing time	Proof height	Loaf weight	Crumb grain	Crumb color	Loaf volume	Poly phenol oxidase	Brightness after 24 hrs
			($lb\ bu^{-1}$)	(mg)	(mm)			(%)	(%)	(%)	(%)	(%)	(min)	(0-6†)	(%)	(min)	(cm)		(0-6†)		(cc)	(AU/min/mL)	
TXE	2	TAM 110	61.6	34.7	2.41	70	001-005-016-078-01	1.29	12.3	67.9	0.35	10.5	2.17	2	61.7	2.99	7.5	150.3	4.0	creamy	900	0.548	71.08
TXE	3	TAM 111	63.6	35.4	2.53	68	000-005-023-072-01	1.37	12.5	69.3	0.32	10.5	2.47	4	61.5	3.08	7.5	149.6	4.5	creamy	860	0.579	72.12
TXE	4	TAM 400	64.4	32.4	2.41	79	001-001-005-093-01	1.42	13.7	67.8	0.34	11.6	3.45	4	64.0	5.23	7.9	151.4	4.0	creamy	990	0.260	72.15
TXE	5	Jagger	61.6	32.5	2.47	76	001-002-010-087-01	1.36	14.4	69.5	0.36	12.5	3.13	2	62.6	3.75	7.4	150.7	3.2	creamy	890	0.432	69.43
TXE	6	Cutter	62.8	34.2	2.47	74	000-002-010-088-01	1.33	13.6	70.1	0.30	12.0	3.25	3	62.7	4.75	7.6	150.5	3.8	creamy	945	0.543	68.74
TXE	7	Ogallala	63.6	28.1	2.26	75	000-002-009-089-01	1.44	14.5	68.8	0.32	12.7	2.50	1	60.6	3.00	7.7	149.1	4.0	creamy	960	0.530	71.39
TXE	8	TX96D1073	62.4	32.7	2.38	65	001-005-027-067-01	1.47	14.7	66.9	0.29	12.5	2.75	0	58.6	2.50	7.2	148.4	3.8	creamy	855	0.620	70.78
TXE	9	TX00D1390	63.2	33.6	2.48	67	001-005-023-071-01	1.38	13.1	70.1	0.30	11.2	4.51	5	62.3	5.86	7.6	150.1	3.5	creamy	880	0.529	71.88
TXE	10	TX01D3232	60.8	31.7	2.42	77	002-002-008-088-01	1.36	13.0	68.4	0.33	11.3	3.21	3	62.6	4.59	7.5	150.1	3.0	creamy	855	0.460	72.50
TXE	11	TX00V1117	65.2	32.6	2.54	72	000-003-013-084-01	1.33	12.5	72.2	0.35	10.8	3.00	2	62.0	4.61	7.5	149.6	3.8	creamy	880	0.470	69.40
TXE	12	TX00V1131	62.4	30.3	2.38	93	000-000-002-098-01	1.51	13.7	66.8	0.35	11.5	3.66	4	64.3	4.24	7.2	150.0	3.8	creamy	940	0.557	68.77
TXE	13	TX01A5936	64.8	37.6	2.68	69	000-004-018-078-01	1.26	13.6	71.8	0.34	11.7	2.66	1	61.6	3.03	7.5	149.0	4.5	creamy	880	0.574	71.18
TXE	14	TX97D5088	62.0	31.2	2.44	82	000-001-004-095-01	1.38	13.4	70.7	0.33	11.9	3.08	0	62.6	3.94	7.8	149.4	3.8	creamy	895	0.141	73.22
TXE	15	TX98D1158	62.4	34.7	2.55	64	002-008-026-064-01	1.33	12.4	69.5	0.31	11.0	4.16	5	62.8	5.92	7.8	150.9	3.8	creamy	915	0.524	71.37
TXE	16	TX99A0154	64.0	34.0	2.51	71	001-003-011-085-01	1.42	13.3	71.5	0.33	11.8	3.40	3	63.4	4.61	7.5	148.7	5.0	creamy	950	0.526	71.53
TXE	17	TX00A0181	64.4	38.6	2.62	75	000-001-006-093-01	1.38	13.0	70.2	0.31	11.2	3.14	4	62.9	4.04	7.4	150.9	3.8	creamy	875	0.371	72.62
TXE	19	TX01V6016	63.6	35.7	2.60	75	000-002-008-090-01	1.42	12.8	69.6	0.35	11.2	2.14	1	60.2	3.14	7.5	148.4	3.2	yellow	870	0.487	71.59
TXE	20	TX01V5135	62.8	31.2	2.40	80	000-001-004-095-01	1.36	13.5	69.3	0.33	11.5	3.42	4	63.5	4.24	7.2	152.0	3.2	creamy	875	0.461	70.39
TXE	21	TX00A0174	64.4	29.7	2.36	79	000-001-007-092-01	1.37	12.5	70.1	0.39	10.9	2.94	4	63.4	3.91	7.4	149.4	3.0	slight yellow	925	0.598	70.64
TXE	22	TX00A0391	63.6	36.0	2.50	75	000-001-007-092-01	1.35	12.9	70.9	0.32	11.2	2.83	4	63.6	3.96	7.2	151.0	4.0	creamy	840	0.492	70.63
TXE	23	TX01A5937	63.6	34.3	2.54	84	000-002-004-094-01	1.35	13.8	69.0	0.34	12.2	2.75	2	62.4	3.38	7.3	153.2	3.2	creamy	810	0.602	70.21
TXE	24	TX01V5314	60.4	34.1	2.50	77	000-004-007-089-01	1.36	14.2	68.1	0.35	12.4	3.88	2	63.5	4.50	7.4	151.7	4.0	creamy	870	0.620	67.81
TXE	25	TX01V5719	63.6	35.2	2.65	67	002-005-020-073-01	1.38	14.0	72.0	0.33	12.6	2.88	1	64.3	3.75	7.9	150.9	5.0	creamy	935	0.153	72.94
TXE	26	TX01V6008	63.2	34.7	2.60	76	000-003-007-090-01	1.37	13.7	68.4	0.35	12.1	3.00	2	63.9	4.50	7.9	150.3	5.0	creamy	950	0.467	70.34
TXE	27	TX01U2527	62.8	32.2	2.42	70	002-003-011-084-01	1.36	13.5	69.0	0.36	11.9	3.57	4	65.3	5.16	8.0	148.1	4.8	creamy	1000	0.489	70.06
TXE	28	TX01U2598	62.4	32.5	2.47	74	001-003-008-088-01	1.39	13.8	69.4	0.32	12.1	3.38	4	63.1	4.50	7.6	149.9	4.5	creamy	945	0.587	71.63
TXE	29	TX01U2723	63.6	31.1	2.40	79	000-000-004-096-01	1.36	12.6	66.7	0.35	11.1	2.66	4	64.4	4.21	7.5	151.0	5.0	creamy	880	0.650	72.35
TXE	30	TX01U2733	63.6	33.0	2.45	80	000-001-004-095-01	1.45	13.1	66.4	0.34	11.2	2.71	4	63.4	4.29	7.4	150.5	5.0	creamy	875	0.658	71.75
TXE	31	TX01U2685	64.4	28.5	2.23	75	000-002-012-086-01	1.41	14.5	70.1	0.32	12.8	3.50	2	63.2	4.00	7.5	148.6	4.2	creamy	985	0.550	70.56
TXE	32	TX01U2699	63.6	30.6	2.38	69	002-004-019-075-01	1.37	14.3	66.5	0.31	12.3	3.50	4	64.6	4.25	7.7	150.3	4.0	creamy	940	0.483	71.83
TXE	33	TX95V4339	62.4	33.3	2.42	71	001-004-016-079-01	1.42	14.2	69.6	0.31	12.5	3.13	2	63.7	4.75	7.5	149.2	3.5	creamy	925	0.445	71.82
TXE	34	TX00D2234	62.0	33.5	2.53	74	002-003-012-083-01	1.33	13.7	67.9	0.33	11.8	1.94	2	62.0	2.55	7.1	149.1	1.8	yellow	860	0.458	70.50
TXE	35	TX01D3215	64.8	35.5	2.70	73	000-003-015-082-01	1.39	14.0	70.2	0.31	12.4	2.50	1	62.9	2.75	7.5	151.1	2.0	creamy	865	0.549	70.78
TXE	36	TX01D3218	63.6	33.4	2.45	77	000-001-009-090-01	1.35	12.7	69.9	0.34	11.3	2.17	1	62.8	2.86	7.5	151.3	3.8	creamy	850	0.629	72.21
TXE	37	TX01D3472	63.6	33.6	2.47	73	001-002-010-087-01	1.38	13.8	70.3	0.33	11.8	5.47	6	63.7	7.17	7.6	150.7	3.5	creamy	900	0.586	70.93
TXE	38	TX99A0556	63.2	37.1	2.53	74	000-001-012-087-01	1.38	12.6	71.1	0.36	10.5	3.60	4	63.4	5.14	7.5	150.7	2.8	yellow	860	0.555	71.55
TXE	39	TX01V6219	63.2	29.5	2.27	74	000-003-010-087-01	1.42	13.4	68.6	0.32	11.6	3.70	4	62.5	5.24	7.2	151.4	3.0	slight yellow	815	0.632	69.27
TXE	40	TX01V6334	62.8	40.4	2.76	69	000-002-016-082-01	1.31	13.6	70.9	0.33	11.8	2.07	1	60.7	2.43	7.0	151.4	2.0	creamy	775	0.655	68.92
UVT	27	TX98D1170	62.0	34.6	2.50	68	003-003-018-076-01	1.34	12.4	67.9	0.34	10.5	1.83	2	60.8	2.35	6.8	151.0	2.2	creamy	785	0.469	70.27
UVT	28	TX98V9628	63.2	34.7	2.44	74	000-002-013-085-01	1.39	13.7	66.7	0.33	11.9	4.32	4	63.6	4.93	7.6	150.8	3.5	creamy	945	0.589	69.42
UVT	29	TX01M5009	60.8	27.7	2.24	82	000-001-007-092-01	1.43	13.7	65.9	0.33	11.6	1.42	1	60.6	2.02	6.8	152.5	1.0	creamy	685	0.563	70.04

SKHT= Single Kernel Hardness Test

† 0= worst, 6= best

Table 6. Data on Forage yield from Wheat Variety Forage Test conducted at Overton, Texas during 2002-03 and 2003-04

Name [3]	Forage Yield (Dry matter)														
	2002-03 [1]							2003-04 [2]						2-years average	
	Nov 7	*Feb 11*	*Mar 10*	*Mar 26*	*Apr 29*	*Total*	*Rank/34*	*Dec 4*	*Jan 29*	*Mar 10*	*Apr 16*	*Total*	*Rank/30*		
	---- *lb a⁻¹* ----														Rank
TX95-38-2	1438	1601	932	714	225	**4909**	9	730	1530	1604	3079	**6943**	1	**5926**	1
TX95-24-1	1551	1710	897	636	428	**5221**	7	746	1469	1917	2177	**6309**	2	**5765**	2
Lockett	2007	880	1137	1023	325	**5329**	5	815	902	1983	2455	**6155**	5	**5742**	3
TX95-16-1	1236	1432	1015	534	593	**4800**	13	744	1502	1678	2227	**6151**	6	**5476**	4
TX98D1170	1069	270	1375	950	1225	**4889**	10	668	633	2182	2560	**6043**	8	**5466**	5
TX98V9628	1521	1176	1011	615	625	**4947**	8	849	1461	2220	1290	**5820**	14	**5384**	6
TX95-118	1484	1512	855	524	463	**4837**	12	556	1363	1569	2030	**5518**	20	**5178**	7
TX97-172	1331	1132	1011	661	472	**4606**	18	516	1066	1875	2284	**5741**	15	**5174**	8
TX01M5009	959	1206	980	540	545	**4229**	29	473	1713	1936	1833	**5955**	11	**5092**	9
TX89-81-1	1507	1884	645	408	410	**4854**	11	761	1423	1956	1155	**5295**	23	**5075**	10
TX95-115	1500	1110	904	410	460	**4383**	23	548	1036	1697	2454	**5735**	16	**5059**	11
Sturdy 2K	1267	635	960	746	468	**4076**	31	424	1199	1807	2445	**5875**	13	**4976**	12
TAM 202	1375	1124	1013	532	348	**4392**	22	533	1302	2159	1190	**5184**	25	**4788**	13
TX96D1073	1349	902	982	667	176	**4075**	32	512	1166	1405	2257	**5340**	21	**4708**	14
TAM 111	1049	632	996	724	368	**3768**	34	883	1148	1325	2192	**5548**	19	**4658**	15
TAM 110	1403	906	1091	536	284	**4219**	30	597	1006	2035	1253	**4891**	29	**4555**	16
Mean	1328	1243	921	672	544	4705		656	1305	1878	1864	5703			
CV	26	33	22	23	47	16		238	228	257	271	494			
LSD	311	375	188	144	231	693		40	19	15	16	9			

[1]Planted on September 13, 2002. Fertilizer: Preplant 91 lb N, P_2O_5 and K_2O/a. Topdressed with 40 lb N on November 12, 33 lb N/a on January 21, 40 lb/a of N, P2O5 and K2O on March 6 and 40 lb N/a on April 15, 2003.

[2]Planted on September 15, 2003. Fertilizer: Preplant 700 lb 13-13-13/a. Topdressed with 40 lb N/a on December 10, 2003, 25 lb N/a on February 19, 2004, and 42 lb N/a on March 31, 2004.

[3]TX95-38-2, TX95-24-1, TX95-16-1, TX95-118, TX97-172, TX89-81-1, and TX95-115 are soft red winter wheat experimental lines from Lloyd Nelson's program. The others are all hard red winter wheat lines or varieties.

Table 7. Mean grain yield from Southern Regional Performance Nursery (SRPN) conducted from 2002 to 2003

Name	2003				2002				2-years average	
	State Average	Rank/46	Region Average	Rank/46	State Average	Rank/46	Region Average	Rank/46	State	Region
	Yield (bu a^{-1})									
TX98V9628	62.2	21	68.8	10	54.5	2	51.3	1	58.3	60.1
Kharkof	40.4	46	43.5	46	28.5	46	27.1	46	34.5	35.3
Scout 66	54.7	43	52.1	45	39.5	45	35.0	45	47.1	43.5
TAM 107	59.1	36	60.9	42	46.7	33	42.3	30	52.9	51.6
Trego	64.9	7	67.2	18	51.1	10	45.3	7	58.0	56.2
# Locations	3		31		4		26		7	57
mean	61.0		65.4		48.2		42.6			
cv (%)	11.0		11.5		10.0		13.0			
l.s.d. (0.05)	10.5		4.3		9.9		3.4			

Table 8. Mean agronomic data from Southern Regional Performance Nursery (SRPN) conducted from 2002 to 2003

Name	Average TW	Average Heading	Average Height	Average Lodging	Average Winter survival	Average Acid soil tolerance	1RS
	lb bu^{-1}	[1] *doy*	cm	%	% stand	(1-5; 1=tolerant, 5=susceptible)	
TX98V9628	59.8	133	80	70	63	2.4	1AL.1RS
Kharkof	58.7	143	100	70	85	4.1	NON.1RS
Scout 66	59.4	138	91	70	83	3.9	NON.1RS
TAM 107	57.8	132	76	25	70	4.0	1AL.1RS
Trego	60.1	137	75	50	80	4.0	NON.1RS
# Locations	49	27	32	2	4	2	2

[1] Days of the year from January 1

2

Table 9. Stem rust data from Southern Regional Performance Nursery (SRPN) conducted from 2002 to 2003

Name	Stem Rust												
	2003					2002							
	Stem Rust (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Stem Rust (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)	Seedling reaction to Stem Rust isolate (St Paul, MN)
	adult/field	01-TX 27C TTTT	74-MN 1409A TPMK	72-MEX 53A RTQQ	69-MN 399 QTHJ	adult	80-MN 633B TPMK	72-MEX 53A RTQQ	98-EGY 5B RRTS	69-MN 399 QTHJ	98-UGA 1A PTHS	01-TX 27C TTTT	Postulated resistance gene(s)
TX98V9628	20 MR	1+	1+	1	1+	5R	2=	2=	1	2=	2=	2=	24
Kharkof	30 MRMS	4	4	34	23+	60S	S	S	0?	S	S	S	?
Scout 66	10 MRMS	33+	3+	1+N	2+3+	TMR	S	;	S	2	S	S	17
TAM 107	30 MR	2	1	1/3	22-	60S	0	1	2=	2=	1	2=	6,17,24
Trego	20 MR	22+	1-	1	22-	30MR	0	2=	;1	1	1	2=	6,24

Seedling infection types: 0=immune response, no sign of infection; ;=hypersensiteve chlorotic or necrotic flecks; 1=small uredinia surrounded by necrosis; 2=small uredinia surrounded by chlorosis; 3=moderate size uredinia without necrosis or chlorosis; 4=large uredinia without necrosis or chlorosis; +=uredinia larger than normal; -=uredinia smaller than normal. A range of infection types is indicated by more than one infection type, with the predominant type listed first.

Field Rust sores: the numeric score indicates % of flag leaf area infected and the infection type is indicated by R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, t= trace, ?= not scored, Dead= no leaf area to score.

Table 10. Leaf and Stripe rust data from Southern Regional Performance Nursery (SRPN) conducted from 2002 to 2003

Name	Leaf Rust												Stripe Rust
	2003							2002					2003
	Leaf Rust (St Paul, MN)	Leaf Rust (Brookings, SD)	Leaf Rust (Stillwater, OK)	Seedling reaction to Leaf Rust isolate (St Paul, MN)	Seedling reaction to Leaf Rust isolate (St Paul, MN)	Seedling reaction to Leaf Rust isolate (St Paul, MN)	Seedling reaction to Leaf Rust isolate (St Paul, MN)	Leaf Rust (St Paul, MN)	Leaf Rust (Castroville, TX)	Leaf Rust (Stillwater, OK)	Leaf Rust (Stillwater, OK)	Leaf Rust (Wichita, KS)	Stripe Rust (Corvallis, OR)
	adult/field	adult/field	seedling	99ND588 THBJ	00SD520 MCDS	99 GA 86-3 TNRJ	97 CAN 64-1 KFBJ	adult	adult	adult (1-9)	seedling	(1-9)	adult/field
TX98V9628	20 S	MS	R	;	;1-	3+	0;	20R-MR	TMS	1	R	1	S
Kharkof	30 MS	S	S	33+	3+	3+	3	60S	80S	3	S	3	R
Scout 66	20 MS	S	S	33+	3+	3+	2+/3+	80S	80MR-MS	6	S	3	S
TAM 107	20-30 MS	S	S	33+	;2	3+	;0	60S	100S	9	S	8	S
Trego	5 MR	R	MR	;	;1-	;	0;	50S	0	1	MR	3	S

Seedling infection types: 0=immune response, no sign of infection; ;=hypersensiteve chlorotic or necrotic flecks; 1=small uredinia surrounded by necrosis; 2=small uredinia surrounded by chlorosis; 3=moderate size uredinia without necrosis or chlorosis; 4=large uredinia without necrosis or chlorosis; +=uredinia larger than normal; -=uredinia smaller than normal. A range of infection types is indicated by more than one infection type, with the predominant type listed first.

Field Rust sores: the numeric score indicates % of flag leaf area infected and the infection type is indicated by R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, t= trace, ?= not scored, Dead= no leaf area to score.

Table 11. Other fungal and viral disease and Hessian fly data from Southern Regional Performance Nursery (SRPN) conducted from 2002 to 2003

Name	Other foliar fungal disease					Viral disease											Hessian fly	
	2003		2002			2003			2002								2003	2002
	Septoria (West Lafeyette, IN,)	Septoria (Columbia, MO)	Septoria (Columbia, MO)	Tanspot (Winfield, KS)	Powdery Mildew (Woster, OH)	Wheat soilborne mosaic virus (Stillwater, OK)	Wheat soilborne mosaic virus (Winfield, KS	Wheat soilborne mosaic virus (Wichita, KS	Wheat soilborne mosaic virus (Stillwater, OK)	Wheat soilborne mosaic virus (Urbana, IL)	Barley yellow dwarf virus (Urbana, IL)	Barley yellow dwarf virus (Urbana, IL)	Barley yellow dwarf virus (Columbia, MO)	Wheat streak mosaic virus (Hays, KS)	Wheat streak mosaic virus (Winfield, KS)	Hessian fly (Manhattan, KS)	Hessian fly (Manhattan, KS)
	(1-9)	%canopy brown	%canopy brown	(1-9)	(1-9)	(1-4)	(1-5)	(1-9)	(1-4)	(0-9)	(0-9)	% Dwarfing	%flag leaf discoloration	(1-9)	(1-9)		
TX98V9628	7	32	7	4	1	2	3	8	2	9	4	0.0	4	4	4	S	S
Kharkof	6	33	36	5	1	1	3	9	2	8	6	18.4	25	7	8	S	S
Scout 66	7	32	50	7	2	2	3	9	3	8	5	6.3	15	7	7	S	S
TAM 107	7	30	17	7	1	1	3	8	2	8	7	18.0	8	5	3	S	S
Trego	7	26	11	6	4	1	1	2	1	4	6	10.9	13	5	4	H	H

Higher numbers (scores and percentages) indicate more severe symptoms

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Table 12. Baking and mixograph data from 2002 Southern Regional Performance Nursery (SRPN). USDA-ARS Hard Winter Wheat Quality Laboratory.

Name	Chemical				Mixograph			Bake		
	wheat		flour		Water Absorp.	Peak time	Tolerance	Water Absorp.	Mix time	Loaf Volume
	Protein (%)	Milling Yield (%)	Ash (%)	Protein (%)	(%)	(min)		(%)	(min)	(cc)
Composite of South Central Plains										
Kharkof	14.4	60.2	0.49	12.6	64.0	4.13	4	63.7	6.13	970
Scout 66	13.5	67.6	0.36	12.0	64.0	2.75	4	64.0	4.00	955
TAM-107	12.8	64.6	0.36	11.3	61.7	3.88	4	62.0	5.00	950
Trego	13.1	66.4	0.36	11.1	62.5	3.00	2	62.1	4.00	855
TX98D1170	13.6	66.0	0.41	12.0	63.4	3.50	4	62.8	4.75	875
TX98V9628	13.1	65.1	0.39	11.7	63.4	5.50	5	65.3	8.50	960
Composite of Southern High Plains										
Kharkof	16.6	57.7	0.49	14.3	66.2	3.75	3	64.2	5.13	895
Scout 66	15.6	66.7	0.38	14.1	65.5	2.38	3	61.8	3.38	930
TAM-107	14.2	64.4	0.36	12.6	63.9	3.00	4	63.0	4.25	905
Trego	13.9	66.1	0.36	12.5	63.8	2.00	2	60.8	3.25	855
TX98D1170	14.7	65.1	0.44	13.5	64.6	2.50	3	63.9	3.25	960
TX98V9628	14.7	62.1	0.40	13.3	64.5	4.00	4	65.6	6.00	975

Table 13. 2004 Uniform Variety Trial (UVT)- Yield and other ancillary data by region of the state

NAME	Yield (bu a^{-1})						Test Weight (lb bu^{-1})					DH	Ht	Shattering	Lodging	Leaf rust[2]			
	Rank/40	State Avg	HP Irr	HP Dry	RP	East/ Cen	Avg	HP Irr	HP Dry	RP	East/ Cen	DOY[1]	cm	0-5, 0=none 5=100%	0-5, 0=none 5=100%	PRO	MCG	CAS	BRD
TX98D1170	1	**62.5**	83.1	32.9	64.5	65.0	**56.7**	56.9	53.2	61.4	57.6	116	75	0.3	1.8	tMR	0	30R/MR	60MR[‡]
TX98V9628	3	**58.7**	79.6	35.1	64.0	52.3	**59.2**	60.4	56.6	62.4	57.3	113	78	0.4	3.4	100S	100S	100S	100S
TAM W 101	24	**47.8**	77.9	25.3	49.1	31.6	**58.0**	59.2	56.5	58.4	57.0	119	72	0.4	1.8	80S	80S	100S	100S
TAM 110	15	**54.4**	81.3	33.4	57.5	39.3	**57.5**	58.0	55.5	60.7	54.9	113	79	0.0	2.3	100S	100S	100S	100S
Jagger	19	**51.8**	76.9	30.3	54.4	40.0	**57.1**	58.6	54.8	61.3	56.1	114	76	1.1	2.9	100S	100S	100S	100S
Ogallala	18	**52.4**	77.7	25.6	53.2	47.0	**58.9**	60.2	55.9	61.8	59.2	119	69	1.7	0.9	20MR	50MS	60MS	30MS/MR
Cutter	11	**56.2**	74.8	31.2	60.1	55.1	**59.0**	59.0	56.9	62.0	59.5	118	79	1.8	3.4	20S	80S	100S	80S
TAM 111	6	**58.4**	90.4	29.8	56.6	48.5	**58.3**	58.6	56.1	62.1	58.7	118	78	0.3	1.3	60S	80S	100S	100S
TAM 202	23	**49.1**	65.5	29.3	58.4	41.5	**57.6**	59.0	55.4	61.3	54.8	115	74	3.0	1.1	80S	100S	100S	100S
Sturdy 2K	27	**43.8**	47.5	25.2	52.2	51.7	**57.3**	57.1	54.2	60.9	59.2	120	81	3.8	1.1	10MR/MS	50MR	40R/MR	60MR/MS
Locations		**16**	5	4	3	4	**14**	4	4	2	4	6	7	2	3				

HP Irr= High plains Irrigated (Bushland, Etter, Nazereth, Dalhart, and Clovis)
HP Dry= High plains Dryland (Bushland, Etter, Claude, and Clovis)
RP= Rolling plains (Chillicothe, Chillicothe (Hardeman Grain), and Abilene)
East/Cen= East/Central (Prosper, Ellis County, McGregor, and Brady)

DH= Days to Heading ([1] Days of the year from January 1)
Ht= Plant height in Centimeter (cm)
Shattering score was taken at Bushland Irrigated and Etter Irrigated.
Lodging score was taken at Bushland Irrigated, Etter Irrigated, and Nazereth.
[‡]A few plants were found with susceptible reaction

[2] Field Rust sores: the numeric score indicates % of flag leaf area infected and the infection type is indicated by R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, t= trace, ?= not scored, Dead= no leaf area to score.

Table 14. 2003 Texas Elite (TXE) by location

2003 TXE		State		High Plains		Rolling Plains		Dallas	South Texas					Agronomy		Diseases			Average Quality				
		Average	Rank	Bushland Irrigated	Claude	Chillicothe	Munday	Prosper	McGregor	Brady	College station	Luling	Uvalde	Height	Heading	Leaf rust		Stripe rust	Test weight	Protein	SKHT Weight	SKHT Diameter	SKHT Index
ENTRY	NAME	Yield (bu a⁻¹)												cm	doy	Luling	Castroville	Castroville	lb bu⁻¹	% (dm)	mg	mm	
1	TAM W-101	42.0	38	79.0	25.0	41.7	25.1	43.1	42.6	52.0	51.0	21.0	39.3	65	120	80S	MR	MR	58.9	14.8	32.2	2.1	61.0
2	TAM 110	42.7	36	77.0	26.5	41.3	30.8	51.0	51.2	51.9	46.8	20.1	31.1	72	117	80S	S	S	57.8	14.0	27.8	1.9	69.3
3	TAM 111	51.1	10	88.6	22.8	52.4	38.8	53.7	71.1	58.1	55.0	26.8	43.4	75	120	60S	?	R	58.6	14.5	28.4	1.9	56.3
4	TAM 400	43.3	34	80.1	16.9	40.4	28.2	41.5	46.3	56.6	49.5	27.2	46.0	65	118	DEAD	MS	VS	61.1	15.1	26.5	1.9	73.5
5	Jagger	45.7	31	76.6	28.0	42.5	40.4	55.8	64.1	56.5	40.5	28.4	23.7	76	118	DEAD	S	MR	58.8	15.7	27.4	1.9	70.5
6	Cutter	56.4	1	89.5	26.5	52.0	39.3	43.9	73.1	55.8	61.3	58.0	64.2	73	120	20S	R	R	60.4	15.3	29.9	2.0	72.3
7	Ogallala	48.6	22	84.3	20.2	45.3	32.0	54.0	58.3	53.6	51.1	42.4	45.3	65	120	20MR	R	MR	60.2	15.6	24.4	1.8	63.3
8	TX97A0122	44.1	32	86.8	16.8	49.7	34.0	54.3	52.4	53.0	44.4	18.5	31.2	69	121	60S	S	MS	56.4	15.1	25.5	1.8	62.0
9	TX98D1170	51.7	8	84.8	23.0	49.1	32.6	64.5	57.8	57.1	59.6	43.5	55.0	71	119	20R	R	MR	57.8	14.5	28.2	1.9	59.0
10	TX99A0155	48.6	21	96.3	21.2	38.2	28.7	54.3	60.4	55.0	57.9	33.3	41.3	63	121	20MR	R	R	59.3	15.0	27.9	1.9	64.3
11	TX98V9628	49.4	16	89.4	25.0	44.8	30.5	59.7	53.5	60.7	57.3	41.7	31.3	72	118	60S	MR	S	60.5	14.5	28.6	2.0	70.0
12	TX97V5300	49.2	18	88.6	25.3	46.8	27.9	54.8	55.0	60.1	56.5	37.4	39.5	77	119	60S	R	S	60.9	14.3	28.7	2.0	69.8
13	TX96D1073	51.8	7	77.1	22.1	47.6	36.3	61.4	64.9	54.0	59.0	45.2	50.5	68	120	5R	R	R	60.2	15.3	30.5	2.1	52.5
14	TX98D2316	49.7	15	88.5	6.8	38.5	33.2	50.7	68.1	55.7	58.1	44.4	52.9	69	123	5;	R	R	59.9	14.5	25.9	1.8	67.3
15	TX99U8618	46.1	30	77.0	24.5	35.8	35.2	38.3	72.1	57.4	59.8	51.4	9.0	69	117	40;/5R	R	R	63.5	15.4	31.8	2.1	71.0
16	TX99D4151	47.3	26	86.1	25.3	46.9	30.5	58.2	54.5	52.8	53.1	26.1	40.0	68	120	40;		MS	58.1	14.3	27.5	1.9	61.5
17	TX97D5088	50.0	13	84.0	22.7	46.6	31.8	56.8	64.2	56.1	54.5	35.4	48.2	68	119	30;	R	R	59.2	15.1	27.3	2.0	68.3
18	TX00V1117	47.5	25	105.7	24.9	50.1	27.7	47.7	43.7	46.7	55.6	32.6	40.6	76	123	5MR		R	58.5	14.8	25.4	1.9	61.5
19	TX01M5008	48.8	20	88.1	23.3	45.4	37.7	58.9	80.6	6.6	71.1	62.1	14.4	66	119	tR	R	R	57.6	14.8	26.7	2.0	64.3
20	TX01M5009	49.8	14	84.3	21.7	43.5	34.6	63.1	74.5	4.4	64.7	61.1	46.0	68	120	tR		R	58.7	14.8	26.0	2.0	69.0
21	TX98D1158	53.8	6	78.5	28.4	46.6	34.2	48.8	68.9	61.9	64.9	56.0	49.7	72	118	5R		MS	60.9	14.2	28.7	2.0	58.0
22	TX01D3200	49.3	17	88.3	22.3	47.9	37.4	51.6	59.3	50.7	59.1	44.1	32.2	71	119	20MR	R	MS	58.8	14.2	30.1	2.1	59.8
23	TX99A0154	51.3	9	83.1	24.2	44.4	37.5	55.7	63.7	56.6	66.4	39.4	42.3	68	119	40MR/MS	MR	S	61.1	14.8	28.0	1.9	62.3
24	TX97V5304	50.8	11	83.6	22.0	48.3	29.7	58.5	56.9	62.4	62.0	39.2	45.4	79	118	30MS		VS	61.1	14.3	28.6	2.0	71.5
25	TX00V1131	55.4	2	92.2	20.6	50.2	37.7	58.3	75.8	59.3	69.3	44.2	46.4	69	120	10R	R	R	59.7	14.5	26.8	1.9	90.5
26	TX01D3232	54.0	3	90.2	28.4	50.9	36.4	54.7	65.4	58.1	64.6	45.9	45.0	69	118	5MR	:	MS	58.4	14.5	27.5	2.0	71.8
27	TX00V1326	49.0	19	83.3	25.3	46.8	34.7	53.5	55.3	55.9	57.5	27.7	49.9	72	120	80S	R	MR	59.7	15.0	29.3	2.0	62.8
28	TX00V1429	46.9	29	84.4	26.4	48.3	30.9	46.8	53.3	46.3	54.6	37.2	40.9	71	122	0-20MR	MR	MR	58.3	15.4	25.8	1.8	65.8
29	TX00D1030	48.3	23	76.7	22.3	44.0	31.6	48.6	59.4	54.9	58.8	38.1	48.9	71	119	40MS		MR	59.9	14.8	25.9	1.9	64.3
30	TX00D1390	53.8	5	82.3	30.2	45.7	33.9	45.8	65.4	58.7	64.5	55.1	56.4	68	121	tR		S	59.7	14.3	27.8	1.9	52.5
31	TX00D1595	40.3	39	71.0	19.2	43.8	20.6	53.8	32.8	46.1	47.2	27.6	41.3	68	120	0,>STP R		S	57.1	15.1	27.3	1.9	76.5
32	TX01D3048	39.7	40	87.7	24.5	46.8	22.3	42.3	31.4	46.7	39.8	27.6	27.6	73	122	0,>STP R		VS	60.5	15.6	26.8	2.0	66.8
33	TX01D3332	50.6	12	70.5	23.6	45.7	36.2	51.3	69.8	59.6	64.7	64.8	19.5	79	117	tR		MR	59.4	14.1	29.0	2.0	28.8
34	TX01V5411	47.6	24	80.4	24.2	47.0	29.8	43.0	59.0	63.5	55.4	49.1	24.5	72	117	60S/10R	MR	S	61.6	15.1	30.6	2.0	62.8
35	TX01V5639	43.9	33	96.5	22.9	40.9	32.7	46.9	47.4	56.9	48.0	34.2	12.9	68	118	DEAD LF	R	VS	59.2	14.0	25.1	1.8	61.0
36	TX00A0181	42.6	37	92.3	24.5	46.4	29.7	42.7	44.7	15.8	56.9	29.6	43.7	72	118	50MR/MS	MR	R	58.9	14.4	30.6	2.0	70.3
37	TX00A0390	47.0	28	95.4	23.5	47.1	27.9	50.3	54.3	51.8	56.2	30.8	32.5	71	121	50S	MR	MR	60.7	14.5	28.4	1.9	71.3
38	TX00A0414	47.0	27	97.9	22.9	45.6	30.5	41.9	58.6	51.7	53.8	28.6	39.1	71	121	10R/S	R	MS	58.5	14.1	27.2	1.9	61.3
39	TX00A0580	42.8	35	95.4	25.4	42.1	27.7	47.2	35.3	50.4	42.8	24.9	36.7	72	120	10R,>STP		S	60.5	14.1	30.8	2.0	74.3
40	TX01A5936	53.9	4	88.4	22.9	49.2	37.5	48.0	67.1	54.1	66.5	52.8	52.3	78	119	40MR/MS	MS	R	61.8	15.0	30.2	2.0	65.5
	# Locations													2	2				8	4	4	4	4
	Mean	48.3		85.7	23.3	45.7	32.4	51.1	58.3	51.6	56.5	38.8	39.5										
	CV%			3.5	24.8	8.0	7.2	9.3	5.3	5.0	4.7	8.1	8.5										
	LSD(.05)			4.9	9.1	6.0	3.8	7.7	2.5	4.2	4.3	5.1	5.5										

Brady: severe deer damage to awnless (19, 20, 36)
Uvalde: freeze damage

Field Rust sores: the numeric score indicates % of flag leaf area infected and the infection type is indicated by R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, t= trace, ?= not scored, Dead= no leaf area to score.

Table 15. 2002 West Texas Elite (WTE) by location

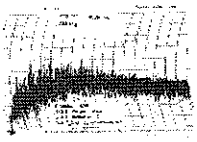
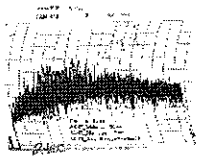
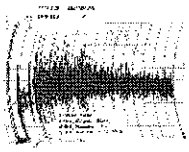
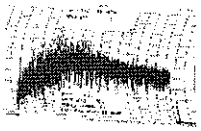
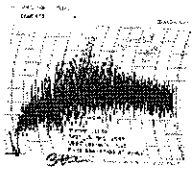
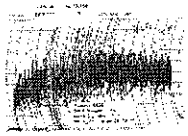
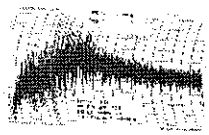
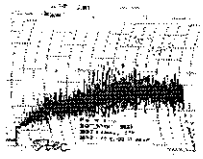
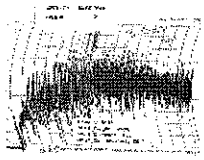
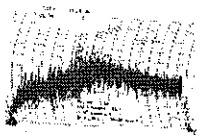
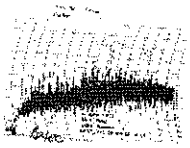
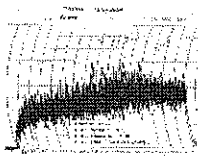
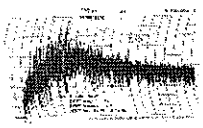
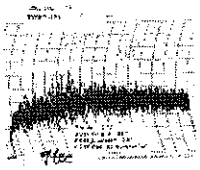
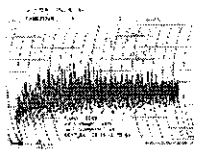
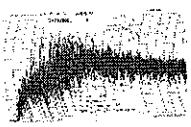
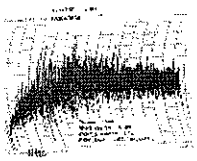
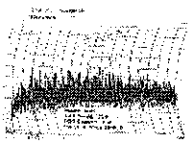
2002 WTE		State		High Plains				Rolling Plains			Dallas	South Texas			Agronomy		Quality				
		Average	Rank	Bushland Irrigated	Bushland Dry	Claude	Etter Dry	Chillicothe	Lockett	Munday	Prosper	Brady	McGregor	Uvalde	Height	Heading	TW	Protein	SKHT weight	SKHT Diameter	SKHT index
ENTRY	NAME	Yield (bu a^{-1})													cm	doy	lb bu^{-1}	%dm	mg	mm	
1	TAM W-101	37.3	36	73.3	22.0	23.7	10.5	41.0	46.9	45.6	36.0	42.6	29.4	37.5	54	124	58.5	15.4	30.7	2.0	62.9
2	TAM 110	42.2	19	71.8	24.6	38.0	12.3	38.2	51.6	48.3	55.6	47.4	28.2	41.5	58	116	56.7	11.5	28.2	1.9	70.4
3	TAM 202	38.3	34	74.1	25.3	29.1	11.7	30.0	34.3	39.6	46.6	51.7	35.9	44.8	57	121	58.0	15.0	28.2	2.0	69.8
4	TAM 302	36.6	37	73.8	19.9	26.5	7.7	33.3	34.8	44.5	48.9	35.5	46.7	40.8	58	124	55.7	15.5	25.4	1.8	70.8
5	TAM 400	41.5	25	82.5	24.0	21.3	7.6	35.5	49.5	61.7	45.1	49.6	34.9	47.0	54	119	60.5	15.2	27.6	2.0	75.7
6	Jagger	41.0	29	68.4	24.1	28.6	8.6	42.3	55.3	47.5	51.0	48.1	27.4	39.3	58	117	57.6	15.6	25.9	1.9	72.7
7	Ogallala	43.6	8	83.3	23.7	28.7	11.2	38.1	53.8	57.5	46.0	47.1	48.4	57.5	58	110	60.3	15.7	24.8	1.9	67.1
8	2145	48.0	2	83.6	23.8	27.7	11.7	40.2	60.6	67.0	68.6	51.1	59.0	54.6	56	119	59.2	15.5	26.4	1.9	58.9
9	Above	43.4	11	75.1	25.5	42.5	13.4	38.8	49.2	45.6	58.8	47.9	27.6	39.0	55	118	56.9	14.8	27.6	1.9	68.8
10	Custer	42.7	16	68.1	26.3	35.2	8.9	38.3	34.9	57.0	61.2	53.2	40.6	47.4	58	119	60.1	14.5	30.8	2.1	65.0
11	Cutter	43.2	12	68.7	24.0	29.1	7.3	43.7	55.8	58.3	47.8	49.7	63.6	62.0	59	121	59.3	15.2	29.5	2.0	71.1
12	Lockett	38.0	35	74.4	20.6	22.5	9.0	32.5	51.5	60.6	34.0	39.8	38.8	28.4	61	126	57.6	15.4	30.1	2.0	62.2
13	TAM 200	41.3	27	86.4	22.2	28.6	9.4	41.2	46.1	48.8	45.4	45.9	40.1	36.5	52	122	60.4	14.7	24.8	1.8	47.8
14	Thunderbolt	43.6	9	72.5	23.3	30.7	11.9	41.7	47.3	60.9	54.9	50.4	32.3	50.7	60	123	60.4	15.6	29.7	2.1	60.4
15	Trego	45.5	4	83.5	25.8	34.8	11.0	38.3	48.5	63.5	45.4	50.9	63.6	53.0	52	120	60.8	14.7	28.0	1.9	50.7
16	Sturdy 2K	41.4	26	65.9	22.0	22.8	7.8	40.2	47.6	58.8	58.4	50.4	51.9	33.6	58	122	58.3	15.4	27.9	1.9	69.2
17	TX95A3091	42.8	15	84.1	25.8	34.3	12.1	40.5	62.6	53.5	42.7	48.4	35.1	33.2	59	121	59.1	14.6	27.9	1.9	66.6
18	AP502-CL	40.6	30	74.1	23.2	35.4	10.9	38.1	49.2	45.5	54.2	45.1	29.1	29.3	57	116	56.2	14.2	28.4	1.9	69.7
19	TX98A5421	41.7	24	71.2	23.4	37.0	10.6	44.3	45.9	48.8	55.1	46.7	26.4	34.9	55	116	57.6	14.4	30.1	2.0	68.7
20	TX98A5424	40.4	31	72.3	23.4	39.0	11.2	39.6	33.1	51.6	51.0	46.3	29.5	31.8	57	117	57.6	14.5	28.4	1.9	71.5
21	TX97A0122	42.9	14	78.8	22.8	32.3	9.5	38.6	52.0	55.2	53.2	44.7	47.6	34.6	53	121	57.1	15.4	25.7	1.8	67.3
22	TX97A0244	34.9	39	74.4	21.7	28.5	8.0	39.9	35.7	43.9	32.8	36.0	30.3	18.0	57	124	57.5	15.4	27.2	1.9	70.2
23	TX97A0169	42.4	18	70.1	23.2	35.0	8.1	46.1	53.3	53.2	55.8	48.5	37.3	33.4	51	116	58.0	14.6	31.0	2.0	62.0
24	TX99A0155	43.0	13	91.1	25.0	28.5	8.6	43.8	42.9	56.1	40.3	50.6	42.3	43.6	52	122	60.3	15.1	28.3	1.9	68.9
25	TX97V2838	43.7	6	82.2	25.8	30.5	8.3	37.8	47.5	59.5	46.6	48.5	50.6	57.0	55	121	60.4	14.8	25.9	1.9	77.0
26	TX98V9628	47.5	3	87.2	27.3	33.4	11.3	44.1	52.5	67.0	56.5	52.9	39.8	47.0	56	118	59.8	14.8	30.2	2.0	72.6
27	TX98V9437	33.8	40	73.6	20.4	16.4	5.8	34.8	39.1	44.6	32.2	40.4	35.0	22.4	49	121	58.2	15.3	24.5	1.8	78.6
28	TX99A0136	42.7	17	78.5	27.5	29.6	6.7	43.3	61.5	50.8	50.5	43.9	37.7	41.8	54	119	58.8	15.0	30.8	2.0	72.9
29	TX99A6030	43.5	10	83.7	22.4	31.4	9.4	38.6	52.2	64.2	41.5	48.5	47.3	47.6	52	119	58.6	14.6	27.3	1.9	68.1
30	TX99A6611	39.7	32	78.4	21.5	26.7	7.6	41.2	41.5	54.7	47.4	36.1	47.6	41.1	54	122	57.6	14.6	30.0	2.0	62.9
31	TX99A6634	42.0	20	81.5	24.3	29.9	9.3	40.0	47.1	58.7	40.5	45.7	44.2	43.9	51	122	58.8	14.9	27.8	2.0	67.6
32	TX97V5300	45.4	5	84.5	27.4	35.0	13.3	38.2	49.8	61.6	47.5	47.9	52.6	49.3	58	119	60.9	14.4	29.7	2.0	74.7
33	TX98V6239	41.8	23	72.1	24.2	22.6	7.2	38.2	45.3	54.0	54.7	48.4	63.0	49.7	57	118	60.1	15.5	27.4	2.0	78.9
34	TX94V2140	36.6	38	79.5	21.4	22.2	7.9	32.4	33.2	48.9	37.7	45.4	35.6	37.1	52	126	57.1	14.7	25.8	1.8	69.3
35	TX97V2836	43.6	7	84.3	23.3	28.6	8.3	41.0	55.2	55.9	47.0	44.7	47.8	51.4	54	121	60.7	15.2	25.3	1.9	74.2
36	TX98U8184	38.6	33	80.2	23.0	23.1	7.4	34.6	38.6	50.7	38.9	47.5	43.0	44.2	54	119	58.2	15.2	25.6	1.9	70.6
37	TX98D1170	48.4	1	81.3	22.6	34.5	9.2	42.9	55.8	67.8	59.7	51.6	70.0	64.2	55	120	57.7	15.2	28.8	1.9	64.6
38	TX98D2423	41.0	28	75.7	21.8	23.6	8.5	41.3	48.7	49.7	51.2	39.7	60.0	56.2	57	122	57.5	14.9	28.2	2.0	81.1
39	TX99D4151	42.0	21	75.7	25.0	28.6	10.3	38.8	45.7	52.0	51.8	44.5	61.8	43.1	55	121	58.5	15.0	25.7	1.9	73.9
40	TX99D4572	42.0	22	74.9	23.7	31.0	7.1	38.9	47.9	54.2	58.1	44.1	46.3	43.9	59	118	58.8	15.1	29.0	2.1	68.8
	# Locations														2	3	10	4	3	3	3
	Mean			77.4	23.7	29.7	9.4	39.2	48.7	54.2	48.8	46.4	43.2	42.8							
	CV%			6.7	5.8	8.7	20.0	15.3	-	10.9		10.5									
	LSD(.05)			8.5	2.2	4.2	2.1	9.7		9.6		8.0									

Table 16. 2002 North Texas Elite (NTE) by location

2002 NTE		State		High plains	Rolling plains		Dallas			South Texas			Agronomy		Quality				
		Average	Rank	Bushland Irrigated	Chillicothe	Munday	Prosper	Cooke County	Ellis County	Brady	McGregor	Uvalde	Height	Heading	TW	Protein	SKHT Weight	SKHT Diameter	SKHT Index
ENTRY	NAME	-----	-----	-----	-----	-----	-----	Yield (bu a^{-1})	-----	-----	-----	-----	cm	doy	lb bu^{-1}	%dm	mg	mm	
1	TAM W-101	39.9	40	79.7	38.5	43.4	31.9	31.2	46.4	42.2	31.2	43.7	62	112	57.4	15.5	32.9	2.1	59.5
2	TAM 110	44.6	38	63.7	40.3	53.8	64.4	29.3	48.9	43.1	25.7	45.2	63	106	55.1	14.6	30.8	2.0	69.5
3	TAM 202	42.4	39	75.1	41.1	41.4	45.1	34.9	45.4	45.4	30.3	48.1	62	109	56.3	14.9	27.5	2.0	74.7
4	TAM 302	45.1	35	82.4	38.7	48.7	48.6	41.8	53.5	39.8	32.3	44.9	66	111	55.5	15.2	29.5	2.0	71.4
5	TAM 400	44.9	37	81.7	39.2	62.7	44.0	35.8	47.5	43.4	27.2	52.1	64	108	58.7	15.3	28.9	2.1	74.2
6	Jagger	45.0	36	66.9	40.7	59.6	50.8	42.9	48.6	41.5	24.9	41.7	63	106	56.3	15.5	28.3	2.0	74.5
7	Ogallala	50.7	21	85.5	39.5	56.5	51.9	48.4	55.4	38.2	50.1	59.6	65	112	60.0	15.6	27.5	2.0	71.0
8	2180	51.5	17	69.1	44.8	58.0	55.6	51.9	65.0	41.9	40.3	43.8	58	106	57.6	15.3	28.3	2.1	69.2
9	Coronado	49.4	25	76.6	40.2	49.8	48.6	48.1	52.7	51.7	42.8	57.7	63	107	59.1	15.1	33.4	2.3	60.1
10	Cutter	58.5	3	81.5	49.6	67.8	55.5	63.0	66.1	46.4	50.9	66.1	68	110	59.1	15.1	31.5	2.1	70.0
11	TAM 301	47.0	29	81.4	45.4	54.5	47.2	44.8	59.3	38.2	31.4	36.1	64	108	57.2	14.9	31.0	2.2	65.0
12	Sturdy 2K	49.8	24	48.1	33.0	54.8	50.9	54.4	65.6	43.9	49.7	40.1	70	111	57.7	14.8	28.3	2.0	83.5
13	TX98U8184	45.2	33	75.2	37.4	60.7	43.5	36.8	44.3	43.6	39.0	48.8	59	107	57.2	14.9	29.9	2.0	79.5
14	TX99U8503	50.8	20	86.2	41.4	61.1	57.9	55.4	49.5	46.3	38.6	31.4	61	108	61.0	15.1	29.7	2.1	79.2
15	TX99U8611	51.3	18	77.1	34.4	62.7	51.9	52.3	56.4	48.0	40.8	63.7	66	107	57.3	14.9	31.7	2.2	74.7
16	TX96D1073	62.3	1	78.5	44.8	66.5	66.0	65.2	74.9	51.8	60.1	65.9	65	108	60.7	14.7	32.3	2.2	55.8
17	TX97D5088	55.2	6	92.9	44.7	61.5	59.1	56.7	68.2	38.0	51.0	38.4	66	110	57.4	15.3	29.9	2.1	68.6
18	TX98D1170	59.4	2	84.6	37.5	73.2	59.1	67.1	67.8	50.5	52.5	59.0	70	108	56.9	14.1	33.6	2.2	57.8
19	TX98D2316	54.6	8	90.0	36.5	69.1	48.2	56.1	65.9	40.0	53.0	59.5	69	111	58.7	14.5	30.6	2.1	68.4
20	TX98D2334	53.6	11	68.5	37.2	60.4	54.9	56.2	67.7	42.2	54.5	44.2	71	110	59.2	14.2	33.0	2.3	54.5
21	TX98D2423	55.5	5	85.9	43.4	63.9	47.9	59.2	62.2	40.5	56.6	56.7	67	111	56.9	14.3	31.4	2.1	68.2
22	TX99D4147	55.2	7	76.9	43.4	57.7	57.5	58.7	65.4	44.9	51.7	54.0	66	108	59.9	15.1	30.4	2.2	61.4
23	TX99D4148	53.1	14	83.9	40.3	62.8	58.2	51.0	59.2	45.8	43.6	55.7	65	110	58.2	14.8	29.8	2.0	60.0
24	TX99D4151	53.4	12	87.9	41.2	66.2	48.2	56.2	56.2	49.5	48.8	42.2	62	109	57.2	14.3	31.2	2.1	60.8
25	TX99D4389	46.3	30	80.4	35.0	56.1	44.0	41.4	58.4	48.1	32.8	36.3	60	112	57.4	15.2	32.1	2.2	63.4
26	TX99D4409	48.5	26	87.7	39.1	65.4	50.6	39.8	49.1	48.8	33.3	50.8	70	108	57.5	14.7	29.5	2.0	64.9
27	TX99D4441	53.8	10	89.5	47.4	60.3	59.3	46.7	57.7	47.2	45.7	55.5	68	109	54.4	14.4	34.4	2.2	64.0
28	TX99D4478	53.9	9	82.1	46.9	64.0	58.2	51.2	66.4	47.5	38.5	38.6	69	109	56.9	14.7	30.8	2.1	69.9
29	TX99D4572	53.2	13	76.2	36.1	50.1	60.5	48.2	66.9	48.2	48.3	54.6	66	106	57.7	14.8	30.5	2.1	68.7
30	TX99D4628	47.5	27	74.1	29.7	50.8	53.4	53.3	51.0	45.5	39.7	47.4	71	108	59.6	14.6	27.5	2.0	66.2
31	TX94-17-3	45.2	34	77.7	42.0	41.1	52.7	51.9	48.6	39.2	35.9	26.6	67	109	57.5	14.7	25.9	1.8	16.8
32	TX94V501	46.0	31	82.6	41.6	44.6	53.6	55.3	60.2	23.5	36.9	27.3	68	109	56.8	14.3	30.4	2.0	7.3
33	TX-F4CS-11-4	49.8	23	59.3	37.8	50.9	55.7	49.6	61.2	53.6	37.8	46.7	68	109	57.5	14.8	32.8	2.1	61.3
34	TX98V6239	56.4	4	73.2	37.8	57.6	60.4	53.2	63.7	53.4	63.5	54.8	62	107	59.7	15.5	27.2	2.0	80.0
35	TX98V7632	52.6	16	89.3	40.5	48.1	56.0	51.7	65.2	50.6	45.9	46.0	62	107	59.0	15.0	29.6	2.1	75.2
36	TX98V9628	53.0	15	93.6	41.6	58.2	58.9	54.2	63.4	51.1	34.2	41.1	66	107	58.8	15.1	29.7	2.0	73.4
37	TX99V3212	50.4	22	96.0	34.4	59.8	46.9	54.5	55.4	52.3	37.3	41.8	68	109	58.3	15.2	28.5	2.0	70.6
38	TX00V1117	51.2	19	88.7	41.2	59.8	47.7	43.6	55.5	52.4	45.5	50.8	66	115	58.9	15.2	27.8	2.0	64.0
39	TX00V1310	45.3	32	93.8	37.1	52.3	46.2	37.0	49.5	46.4	34.7	37.5	63	114	57.2	14.7	26.1	1.8	20.1
40	TX00V1731	47.4	28	94.7	41.1	50.3	51.1	40.4	58.8	44.2	33.3	38.0	62	114	56.2	15.2	29.2	2.0	66.6
	# Locations												1	4	9	3	2	2	2
	Mean			80.5	40.1	57.2	52.5	49.2	58.1	45.2	41.8	47.3							
	CV%			-		14.2	13.8	12.8	9.2			-							
	LSD(.05)			-		13.2	11.8	10.4	8.8			-							

20060274

Figure 1. Mixograms and other quality data of the TX98D1170 and TX98V9628 compared with standard checks from 2003 TXE tested at three location. The numerical data below each mixogram represent protein (%), test weight (lb bu^{-1}), and kernel weight (mg) in the first row; single kernel hardness index and distribution in the second row.

	Bushland	Chillicothe	McGregor
TAM 110			
	14.6 60.0 31.0 60 08–21–25–46–02	15.2 61.0 30.4 74 01–03–12–84–01	13.8 58.7 24 80 00–03–07–90–01
TAM 111			
	14.8 62.0 32.0 59 05–19–31–45–01	15.5 61.4 28.9 57 07–21–30–42–02	15.0 60.1 27 57 09–20–28–43–02
Jagger			
	16.8 60.0 30.0 67 02–10–22–66–01	15.9 61.8 29.9 77 00–03–13–84–01	16.1 59.6 25 76 01–06–13–80–01
Cutter			
	15.8 62.0 32.0 66 03–10–25–62–01	16.3 62.3 30.5 77 00–03–13–84–01	15.9 61.2 26 80 01–01–07–91–01
TX98D1170			
	14.7 61.0 33.0 56 07–22–28–43–02	15.4 60.7 31.4 67 05–06–21–68–01	15.0 58.6 24 67 03–08–17–72–01
TX98V9628			
	15.6 62.0 32.0 65 04–10–28–58–01	15.4 62.0 31.8 75 00–04–14–82–01	14.0 61.4 26 75 01–02–13–84–01

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Texas Agricultural Experiment Station	TX98V9628	TAM 112
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	(979) 845-4747	(979) 458-4765
	7. PVPO NUMBER 200600274	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ **YES** ☐ **NO**

10. Is the applicant the original owner? ☑ **YES** ☐ **NO** **If no, please answer <u>one</u> of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

The original breeder (that made the cross) is Dr. David Worrall, a TAES employee located at TAES' facilities in Vernon, Texas, at the time of the cross. TAES policy and handbook manual provide that all germplasm and varieties developed by its employees in the course of their duties are owned by TAES. A copy of this policy is provided for your records.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	TEMPORARY OR EXPERIMENTAL DESIGNATION
Texas Agricultural Experiment Station	Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	TX98V9628
		VARIETY NAME TAM 112
NAME OF OWNER REPRESENTATIVE (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	FOR OFFICIAL USE ONLY
Mark A. Hussey	Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	PVPO NUMBER 200600274

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Mark A Hussey
Signature

8-10-2006
Date

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